WISCONSIN LEGISLATIVE COUNCIL
STAFF MEMORANDUM

Memo No. 2

TO: MEMBERS OF THE SPECIAL COMMITTEE ON SEPTAGE DISPOSAL

FROM: John Stolzenberg, Chief of Research Services

RE: Example Application of the Limit in WLC: 0054/1 on Septage Disposal Fees Charged by Municipal Sewage Systems

DATE: November 9, 2004

This Memo provides an example of the application of the limit in WLC: 0054/1 on the fees a municipal sewage system may charge a licensed disposer, or septage hauler, to dispose septage at the system's facilities. WLC: 0054/1 relates to septage disposal fees charged by municipal sewage systems.

The formulas in this Memo use "*" to denote multiplication and "/" to denote division.

DESCRIPTION OF DISPOSAL FEE FORMULA

The limit on septage disposal fees is set forth in proposed s. 281.49 (5) (f) to (h), as created on page 5, lines 1 to 21, in WLC: 0054/1. Under these provisions, the disposal fees that a municipal sewage system may charge a licensed disposer to dispose of a load of septage comply with the limit if:

- The total amount of septage disposal fees are less than or equal to 150% of the sum of the following charges:
  - The volume charge, or charges, for the disposal of a comparable amount and strength of sewage that the system charges customers connected to its system.
  - The amount of a fixed, periodic service charge, adjusted to a 30-day basis, that the system charges customers with comparable strength of sewage connected to its system, via the size of the customer meter most frequently used by these customers or other comparable measure of wastewater discharges, times a proration factor that reflects that a licensed disposer does not continuously discharge to the system.

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EXAMPLE OF CALCULATION OF DISPOSAL FEE FORMULA

Note: The formula is set out below, followed by a detailed description of the components of the formula. This part of the memorandum then makes assumptions for the various components of the formula. This part of the memorandum concludes with a calculation of the formula based on these assumptions. The result of the calculation is that the assumptions made in this memorandum result in a total fee for septage disposal in a municipal sewage treatment plant that is appropriate under the formula in the bill draft, WLC: 0054/1.

The Formula

$F_V + Fs + F_T + F_A + F_O \leq 1.5 * (C_V + C_S + (C_F * P))$

[If this formula is true, that is, the sum of the septage disposal fees for a load of septage is less than or equal to 150% of the sum of sewerage service charges the municipal sewage system charges its customers connected to its system that discharge a comparable amount and strength of sewage to the system, the disposal fees comply with the limit.]

Components of the Formula: Septage Disposal Fees

F_V = Fee based on volume of the septage.

Fs = Fee or fees based on strength of the septage.

F_T = Fee for testing the septage.

F_A = Fee for administrative and personnel expenses.

F_O = Other septage disposal fees authorized by s. 281.49 (5) (c) 4. and (e), as created by WLC: 0054/1.

Components of the Formula: Connected Customer Service Charges

C_V = Charge based on volume of wastes.

C_S = Charge or charges based on strength of wastes.

C_F = Fixed, periodic charge, adjusted as follows:

$C_F = C_{F30}$, if the charge is applied every 30 days.

$C_F = (C_{Fx}$, if the charge is applied every X days (other than 30 days)) * (30 / X)

Where:

C_{F30} = The applicable fixed, periodic service charge applied on a 30 day basis.

C_{Fx} = The applicable fixed, periodic service charge applied on a "X" day basis (other than 30 days).

X = Number of days to which the charge applies.

P = Proration factor = D / 30

Where:

D = Proxy for the number of days it takes for the septage to be treated, as specified by the Special Committee.

Assumed Disposal Fees Charged by Municipal Sewage System to Licensed Disposers

Volume fees:

- $30.00 per 1,000 gallons of septage.

Strength fees:

- $0.40 per pound of biochemical oxygen demand (BOD), if the concentration of BOD exceeds 250 milligrams per liter (mg per l).
- $0.35 per pound of total suspended solids (TSS), if the concentration of TSS exceeds 250 mg per l.

Administrative fee:

- $50 per year permit fee for a licensed disposer to dispose septage at the system's facility.

Assumed Service Charges by Municipal Sewage System to Connected Customers

Volume charge:

- $9.00 per 1,000 gallons of sewage.

Strength charges:

- $0.40 per pound of BOD, if the concentration of BOD exceeds 250 mg per l.
- $0.35 per pound of TSS, if the concentration of TSS exceeds 250 mg per l.

Quarterly service charge:

- $22.00 for 5/8 inch meter
- $26.00 for 3/4 inch meter.
- $33.00 for 1 inch meter.
- $76.00 for 2 inch meter.
- $140.00 for 3 inch meter

Assumed Characteristics of the Septage Being Disposed and Other Assumptions

Type of septage = Residential septic tank wastes.

Quantity of septage = 3,000 gallons.

Strength of septage = 2,700 mg per l of BOD and 12,800 mg per l of TSS.

Number of trucks operated by the licensed disposer = 1.

Number of loads per year the licensed disposer disposes at the system's facility = 4.

Most frequently used meter size used by connected customers with comparable strength wastes = 1 inch meter.

Proration factor = 5 days / 30 days = 0.167

Calculation of the Limit under the Above Fees, Charges, and Other Assumptions

$F_V + Fs + F_T + F_A + F_O \leq 1.5 * (C_V + C_S + (C_F * P))$ True?

Components of the septage disposal fees:

F_V = ($30 per 1000 gallons) * 3000 gallons = $90.00

Fs = [($0.40 per lb BOD) * (2,700 mg BOD per l) * (0.00834 lb per 1,000 gal) * 3,000 gal)] +

($0.35 per lb TSS) * (12,800 mg TSS per l) * (0.00834 lb per 1,000 gal) * 3,000 gal)] = $139.11

Where 0.00834 lb per 1,000 gal is the conversion factor equivalent to 1 mg per l.

F_T = $0

F_A = ($50.00 per yr) / (4 loads per year) = $12.50

F_O = $0.

Components of connected customer service charges:

C_V = ($9 per 1000 gallons) * 3000 gallons = $27.00

C_S = [($0.40 per lb BOD) * (2,700 mg BOD per l) * (0.00834 lb per 1,000 gal) * 3,000 gal)] +

($0.35 per lb TSS) * (12,800 mg TSS per l) * (0.00834 lb per 1,000 gal) * 3,000 gal)] = $139.11

C_F = ($33.00 per qtr) * (30 / 90) = $11.00

P = 5 days / 30 days = 0.167

Calculation

$90.00 + $139.11 + $0 + $12.50 + $0 $\leq$ 1.5 * ($27.00 + $139.11 + ($11.00 * 0.167)) True?

$241.61 $\leq$ 1.5 * $167.94 True?

$241.61 $\leq$ $251.92 Is true, and thus the disposal fees under the fees, charges, and assumptions given above meet the limit in WLC: 0054/1.

JES:jal